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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,829	10/19/2001	William C. Hiatt	12053	9542
28454	7540	10/29/2003	EXAMINER	
BASF CORPORATION LEGAL DEPARTMENT 1609 BIDDLE AVENUE WYANDOTTE, MI 48192			BARRY, CHESTER T	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/039,829		HIATT ET AL.	
	Examiner		Art Unit	
	Chester T. Barry		1724	

-- The **MAILING DATE** of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 12-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

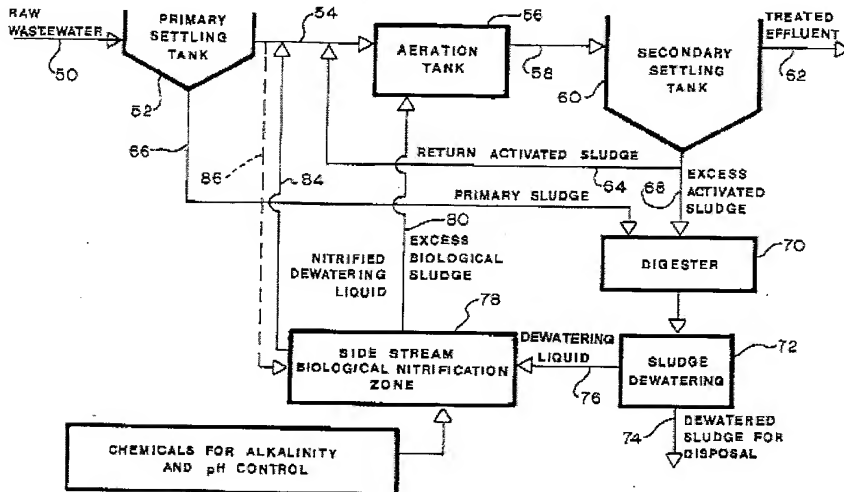
Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>10/19/01</u> . | 6) <input type="checkbox"/> Other: |

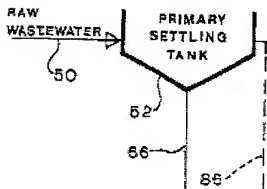
USP 5811009 to Kos describes a method for treating waste water.



The method comprises the following steps:

- flowing a waste water stream into a primary clarifier 52;
- settling the waste water in the primary clarifier to form a primary sludge 66,
- flowing the primary sludge from the primary clarifier into a first reactor basin (digester 70);
- adding an activated sludge (waste activated sludge 68) to the digester 70; and
- degrading the primary sludge in the digester wherein where the primary sludge and the waste activated sludge are held for a selected but undisclosed time period sufficient to digest the sludge (col 6 lines 1 – 5).

The waste water does not appear to contain soot. Kos does not appear to add at least one of a surfactant or a flocculating agent to the waste water stream before flowing the same to the primary clarifier 52. It is not clear whether the digester 70 has an average hydraulic retention time of at least 120 hours. The Kos primary clarifier is not covered as shown by Fig. 1.



USP 5106496 to Cournoyer describes a method for treating waste water comprising the following steps:

- a) adding at least one of a surfactant or a flocculating agent ("neutralizer flocculent" of Fig. 1) to a waste water stream (at vessel 16, 17) and then flowing the waste water stream into clarifier ("primary clarifier 22"); and
- b) settling solids from the waste water in the primary clarifier 22 to form a primary sludge (col 5 lines 50 – 52).

Cournoyer does not describe the waste water stream as comprising soot. Cournoyer does not describe flowing the settled primary sludge from the primary clarifier into a first reactor basin having an average hydraulic retention time of at least 120 hours, adding an activated sludge to the first reactor; or degrading settled soot in the first reactor basin.

USP 4642187 teaches that hydraulic retention times of 40 – 60 days are conventional in anaerobic digestion of waste water.

USP 4197597 to Toms teaches that rain removes air borne soot from the air. Accordingly, the water inside the primary clarifier comprises soot, but there is no indication that the waste water upstream of the primary clarifier contains soot.

Use of a flocculent in the primary clarification step described by Kos would have been obvious because such practice improves primary clarification, as implied by Cournoyer, or because such practice is known and conventional, as demonstrated by Cournoyer. A digestion hydraulic retention time of greater than 120 hours would have been obvious either because HRT is a known result-effective variable in digestion processing, as

shown by USP 4642187, or because USP 4642187 teaches that the HRT of conventional anaerobic digestion processes is 40 - 60 days.

USP 5094752 to Davis describes a method for treating waste water comprising the following steps:

- a) flowing a waste water stream 11 into a primary clarifier 12;
- b) settling the waste water in the primary clarifier 12 to form a waste primary sludge 14,
- c) flowing the waste primary sludge 14 from the primary clarifier 12 into a first reactor basin (digester 17);
- d) adding to the first reactor (digester 17) an activated sludge (from settling basin 16); and
- e) degrading the settled soot in the first reactor basin (digester 17).

The average hydraulic retention time in the digester 17 is about 98 hours,¹ not at least 120 hours as required by claim 1. It is not clear whether the influent waste water 11 contains soot. Further, it is not clear whether at least one of a surfactant or a flocculating agent is added to the influent waste water stream before it is flowed into the primary clarifier 12.

USP 5628911 to Kowallik at Fig. 1 describes a method for treating soot-containing waste water comprising the following steps:

- a) adding at least one of a surfactant or a flocculating agent (flocculating agent at 5) to a soot-containing waste water stream (from soot slurry holding tank 3 at mixer 4) and then flowing the soot containing waste water stream into a clarifier 6;
- b) settling the soot from the waste water in the clarifier 6 to form a settled soot,
- c) flowing the settled soot from the clarifier 6 into a first reactor basin (cake combustion unit 8) at which an oxidation reaction, i.e., combustion, takes place, thereby degrading the settled soot in the first reactor basin.

¹ At col 8 lines 43-53: 1500000 gal/d / 365645 gallons = 98.4 hr

The cake combustion unit 8 does not appear to have an average hydraulic retention time of at least 120 hours. Kowallik '911 does not describe adding an activated sludge to the first reactor basin. At col 1 lines 30-46, USP 5770093 to Shiota teaches away from substitution of an activated sludge process for the combustion unit of Kowallik '911 even though Shiota recognizes that combustion via incineration and biological activated sludge processing have been used for the same general purpose: Waste water treatment (col 1 line 31).

USP 5073271 to Sander is cited for the suggestion to dispose of soot water in a biological water treatment plant. See column 1 line 22. The sewage sludge added to the soot water is either primary sludge, waste activated sludge, or a mixture of primary sludge and waste activated sludge. See col 2 lines 50-58. Sander fails to describe the claimed invention.

USP 5811009 to Kos describes a method for treating waste water comprising the following steps:

- a) flowing a waste water stream into a primary clarifier 52;
- b) settling the waste water in the primary clarifier to form a primary sludge 66,
- c) flowing the primary sludge from the primary clarifier into a first reactor basin (digester 70);
- d) adding an activated sludge (waste activated sludge 68) to the digester 70; and
- e) degrading the primary sludge in the digester wherein where the primary sludge and the waste activated sludge are held for a selected but undisclosed time period sufficient to digest the sludge (col 6 lines 1 – 5).

The waste water does not appear to contain soot. Kos does not appear to add at least one of a surfactant or a flocculating agent to the waste water stream before flowing the

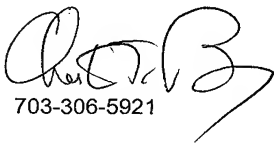
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same to the primary clarifier 52. It is not clear whether the digester 70 has an average hydraulic retention time of at least 120 hours. Although Sander describes a process in which soot water and activated sludge are combined, Sander does **not** suggest adding soot to the influent waste water stream described by Kos. Use of a flocculent in a primary clarification step would have been obvious, as shown by Courmoyer. A digestion hydraulic retention time of greater than 120 hours would have been obvious either because HRT is a known result-effective variable in digestion processing, as shown by USP 4642187, or because USP 4642187 teaches that the HRT of conventional anaerobic digestion processes is 40 - 60 days.

USP 5670061 to Kowallik is cited for disclosure of addition of anionic and cationic flocculating agents to a soot slurry (col 4 lines 15-16).

Claims 1 - 11 are allowed. Claims 12 - 21 are withdrawn from consideration as being directed to a non-elected invention. In traversing the restriction requirement, Applicant argues the restriction is improper because of "overlapping searches." The mere fact that a portions of a search are overlapping is not evidence of a search burden. The search of method claims 1 - 11 in the process portion of Class 210 (subclasses 600 - 808) does not require a search of the apparatus portion of class 21, for example (subclasses 85-542). Accordingly, the requirement for restriction is made FINAL.

The application will be allowed upon cancellation of the non-elected claims.



703-306-5921

10/23/03

CHESTERT. BARRY
PRIMARY EXAMINER